ARCO Metals Internal Correspondence

cc. DSM
JCW

SEP 1 , 1982

E.L. CAMBRIDGE

DATE: September 2, 1982
SUBJECT: Sample Correlations from the Cell Data File

FROM: G. W. Snow
TO: D. P. Alzheimer

File: 1.1.2

BACKGROUND:

The Cell Data File was intended for monitoring present and reviewing historical operations, and for determining the "best operating parameters." Present and historical data are now used by the Potline personnel on a daily basis. However, an effort to determine the best operating parameters has not been fully pursued. This memo is intended to demonstrate the types of comparisons and analyses which can be made using the Cell Data File. Careful analysis and review of this type of data should allow us to build cells that last longer, that maintain higher current efficiency and lower DC kilowatt-hours per pound of aluminum produced.

DICUSSION and OBSERVATIONS:

Several sample correlations were performed using the following information obtained from the Cell Data File.

1) Cell type (green tag or SK, blue tag and red tag).
2) Operational current efficiency (CE).
3) Major operating parameters.
4) Cell construction.

Several preliminary observations follow:

* Bath Temperature / Ratio - Cells operating at higher CE, tend to have stable (minimal variance) temperatures and ratios.
* Bake Duration - Cells operating at lower CE, tend to have longer bake times.
* Current Efficiency:
  * Blue tag cells appear to operate at a higher CE than SK cells (89.87% @ 835 average pot days vs 88.14% @ 1,356 average pot days - notable difference in average pot days).
  * Cadillac cells did not produce as well as blue tag cells (87.36% @ 836 average pot days vs 89.87% @ 835 average pot days).

This attached information represents only a cursory review of some of the available data. There are many other types of correlations and analyses which should be performed to better understand the various types of cells and to project pot life.

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R. A. SNEDDON RECEIVED SEP 3 1982 THE ANA. CO. COLUMBIA FALLS, MONT.

Gary W. Snow

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